EHS–International, Inc.

13228 NE 20th Street, Suite 100
Bellevue, Washington 989005-2049
Phone 425-455-2959
Toll Free 800-666-2959
Fax 425-646-7247

July 24, 2014

Mr. Garrett Condel
Sellen Construction
227 Westlake Avenue North
Seattle, WA 98109

Subject: **LEED EQ Cr. 3.2– Indoor Air Testing**
The Park Place Building – Floor 14
1200 Sixth Avenue, Seattle, Washington
EHSI Project 10605-01

Dear Mr. Condel:

At your request, EHS-International, Inc. (EHSI), an environmental health and safety consulting firm, conducted indoor air testing in support of LEED EQ Credit 3.2, (CI) on the 14th Floor of The Park Place Building located at 1200 Sixth Avenue, Seattle, Washington. Sampling was conducted on July 22nd, 2014. The results, conclusions and recommendations are included in the attached report.

EHSI is pleased to provide our professional industrial hygiene services. If you have any questions concerning this report or if EHSI can provide further services to you, please call me at (425) 455-2959.

Sincerely,

EHS-International, Inc.

Clinton Holzhauer, LEED AP, CMC
Manager, Indoor Air Quality Services

Floor 14
The Park Place Building
LEED EQ Credit 3.2—(CI) Air Testing Results

The Park Place Building
1200 Sixth Avenue, Seattle, Washington

Prepared for:

Mr. Garrett Condel
Sellen Construction
227 Westlake Avenue North
Seattle, WA 98109

July 24, 2014
EHSI Project 10605-01

EHS–International, Inc.

13228 NE 20th Street, Ste. 100
Bellevue, Washington 98005
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EHS-International, Inc.

Indoor Air Quality Consulting & Building Investigations

13228 NE 20th Street, Ste. 100 Bellevue, WA
(425) 455-2959 • Fax (425) 646-7247
www.ehsintl.com

Results of Indoor Air Quality Testing in Park Place Building

Floor 14

1200 Sixth Avenue, Seattle, Washington
For LEED IEQ Credit c3.2

EXECUTIVE SUMMARY

EHS-International, Inc. (EHSI), an environmental health and safety consulting firm, conducted indoor air quality (IAQ) testing in a newly renovated area on the fourteenth (14th) floor of the Park Place Building, located at 1200 Sixth Avenue, Seattle, Washington, on July 22nd, 2014. The purpose of the testing was to determine whether the space is in compliance with the indoor environmental quality (IEQ) standard IEQ Credit c3.2 established by the United States Green Building Council (USGBC) for LEED® for Commercial Interiors (CI) 2009.

EHSI accomplished LEED® IAQ sampling in one (1) indoor location on the 14th floor. Sampling included using hand-held instruments to directly read and data-log concentrations of carbon monoxide (CO) and airborne particulates less than 10 microns in diameter (PM10) and collecting samples for laboratory analysis of airborne concentrations of total volatile organic compounds (TVOCs), formaldehyde and 4-phenylcyclohexene (4-PCH).

Results from the sampling indicate that concentrations of CO, PM10, TVOCs, formaldehyde and 4-PCH were all less than the maximum allowable values established by LEED®.

These results indicate that the newly renovated fourteenth (14th) floor in the Park Place Building has passed the Indoor Environmental Quality Tests for LEED IEQ Credit c3.2.

BUILDING CONDITIONS DURING TESTING

- The renovation of the 14th floor was completed at the time of testing.
- The 14th floor has a footprint of less than 13,000 square feet and one air handling unit provides conditioned air to the space.
- The samples were collected between 3 and 6 feet above floor level and sample collection took place over a four hour period.
- All samples were collected between 8:00 am and 12:00 pm.

A letter provided by the MacDonald-Miller Facility Solutions HVAC system specialist stating that the heating, ventilating and air conditioning (HVAC) system will be in normal operations throughout the test period is presented in Appendix G.

TESTING SCOPE & METHODS USED

Based on the LEED® requirements one (1) location on the 14th floor was chosen for testing. The LEED® requirements are based on square footage and the number of ventilation systems. Testing was conducted in the following location:

- Floor 14 – GIS Room – an interior office space located near the northwest of the floor

A floor plan denoting the sampling location is included in Appendix A.

EHSI tested for carbon monoxide (CO), airborne particulates less than ten microns in diameter (PM10), total volatile organic compounds (TVOCs), formaldehyde and 4-PCH.

Real time measurements were made of carbon monoxide (CO) and fine airborne particulates less than 10 microns in diameter (PM10). The measurements were obtained using a calibrated TSI Q-Trak indoor air monitor for CO and a calibrated TSI Dust-Trak for PM10. Data was logged every minute over a four-hour period. Additional information for CO is provided in Appendix B and additional information for PM10 is located in Appendix C. Calibration data for the direct read instruments used is included in Appendix D.

4-PCH was sampled using an SKC charcoal tube (226-001) and a low flow personnel sampling pump calibrated to sample at a rate of 0.20 liters per minute. The collected sample was transferred to Galson Laboratories (Galson) in East Syracuse, New York, under chain-of-custody control and analyzed in accordance with modified NIOSH 1501 using gas chromatography with a photoionization detector (GC/PID). All analytical tests were conducted on a “next day” turn-around-time basis.

TVOCs were sampled using a one-liter evacuated SUMMA canister with a 4-hour regulator. The sample was submitted, under chain-of-custody control, for analysis to Galson. Samples were analyzed in accordance with modified OSHA PV2120/modified EPA TO-15 using GC/MS.

Formaldehyde was sampled using a N580 Assay passive monitoring badge with both face plates removed. The monitoring badge was submitted, under chain-of-custody control, for analysis to Galson. Samples were analyzed in accordance with modified OSHA 1007 using High Performance Liquid Chromatography (HPLC) with Ultraviolet light (UV).

The Galson laboratory analytical test results report for TVOCs, 4-PCH and formaldehyde is included in Appendix E. EHSI Field Data sheets are presented in Appendix F. The letter from the MacDonald-Miller Facility Solutions HVAC System Specialist is included in Appendix G.

Sampling was conducted by Mr. Rory Peterson, EHSI Industrial Hygiene Technician, on July 22nd, 2014. All samples were collected at a height of 3 to 6 feet from the floor. Laboratory results were expedited.

TEST FINDINGS

The results from testing, presented in micrograms per cubic meter (ug/m^3), parts per billion (ppb) or parts per million (ppm) are listed in Table 1.

Table 1
TVOCs, PM10, CO, Formaldehyde and 4-PCH
14th Floor
July 22nd, 2014

Sampling Location	TVOCs (ug/m^3)	PM10 Particulates (ug/m^3)	CO (ppm)	Formaldehyde (ppb)	4-PCH (ug/m^3)
Date & Time	July 22nd 8:00 – 12:00	July 22nd 8:02 – 12:04	July 22nd 8:03 – 12:05	July 22nd 8:00 – 12:00	July 22nd 8:02 – 12:02
Floor 14 GIS Room– Interior Room near NW corner of floor	<200	5	0.3	<20	<4
LEED Maximum Allowable	**500**	**50**	**9**	**27**	**6.5**

< = less than

CONCLUSIONS

Results from air testing on the newly renovated 14th Floor of the Park Place Building, located at 1200 Sixth Avenue, Seattle, Washington, indicate that the space had concentrations of carbon monoxide, formaldehyde, TVOCs, PM10 and 4-PCH that were below the maximum allowable concentrations established by LEED®.

These results indicate that the 14th Floor has **passed** the Indoor Environmental Quality Tests for LEED® IEQ Credit 3.2 CI.

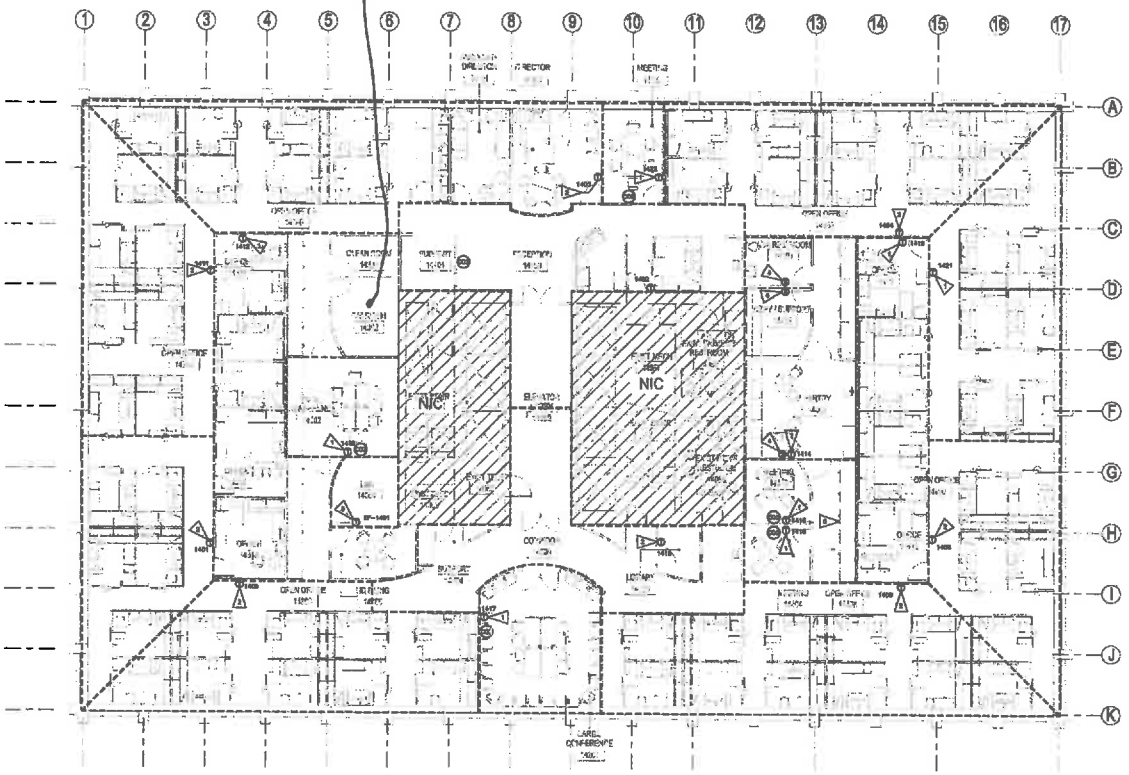
LIMITATIONS AND STANDARD OF CARE

This testing was conducted by EHS-International, Inc. in accordance with the scope of work defined by EHSI proposal 13-018 and the USGBC LEED Reference Guide, 2009 Edition. EHSI followed currently accepted industrial hygiene practices, including professional opinions based on observations and laboratory data obtained. Other than this, no warranty is implied or intended.

APPENDIX A

FLOOR PLAN WITH SAMPLING LOCATION

7/22/14



SHEET NOTES:

1. INSTALL TEMPERATURE SENSORS 48" ABOVE FINISHED FLOOR UNLESS NOTED OTHERWISE.
2. INSTALL CARBON DIOXIDE (CO2) SENSORS 48" ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED.

FLAG NOTES:

1. TEMPERATURE SENSOR FOR NEW TERMINAL UNIT.
2. NEW TEMPERATURE SENSOR FOR EXISTING TERMINAL UNIT.
3. PROVIDE EXHAUST FAN WITH DISCHARGE TO RETURN AIR PLENUM FOR COOLING TO LAN 14304.
4. CONNECT TO RELAY IN OCCUPANCY SENSOR PROVIDED BY ELECTRICAL CONTRACTOR FOR CONTROL OF EXHAUST FAN.
5. SINGLE ZONE WITH MULTIPLE SENSORS. CONTROL TO WORSE CASE SCENARIO.

HVAC ZONE PLAN - 14TH FLOOR
SCALE: 1/8" = 1'-0"

1

Q:\32.8163.000\BIM\Building Model_User Model Files\Barry Zimmerman_32.8163.000_EPA_Phase 2.rvt

Provided to Builders Exchange of WA, Inc. For usage Conditions Agreement see www.bxwa.com - Autoyt Verify Scale

EPA - REGION 10

1200 6th Ave.
Levels 10-16 & 18-21
Seattle, WA 98101

Gensler
1200 5th Avenue Suite 500
Seattle, WA, 98101
Telephone 206.654.2100
Facsimile 206.654.2121

HARGIS

Date & Issue Description	By	Check
10/26/2011 80% CD / Pricing	AH	RE
02/06/2012 90% CD / Pricing	AH	RE
04/06/2012 100% CD / Pricing	AH	RE
01/28/2013 80% Combined Set	AH	RE

Seal/Signature

Project Name
EPA - REGION 10

Project Number
32.8163.000

Description
HVAC ZONE PLAN - 14TH FLOOR

Scale
1/8" = 1'-0"

M03.14A

1/22/2013 1:37:58 PM

APPENDIX B

CARBON MONOXIDE (CO)

The Park Place Building
Floor 14
July 22, 2014

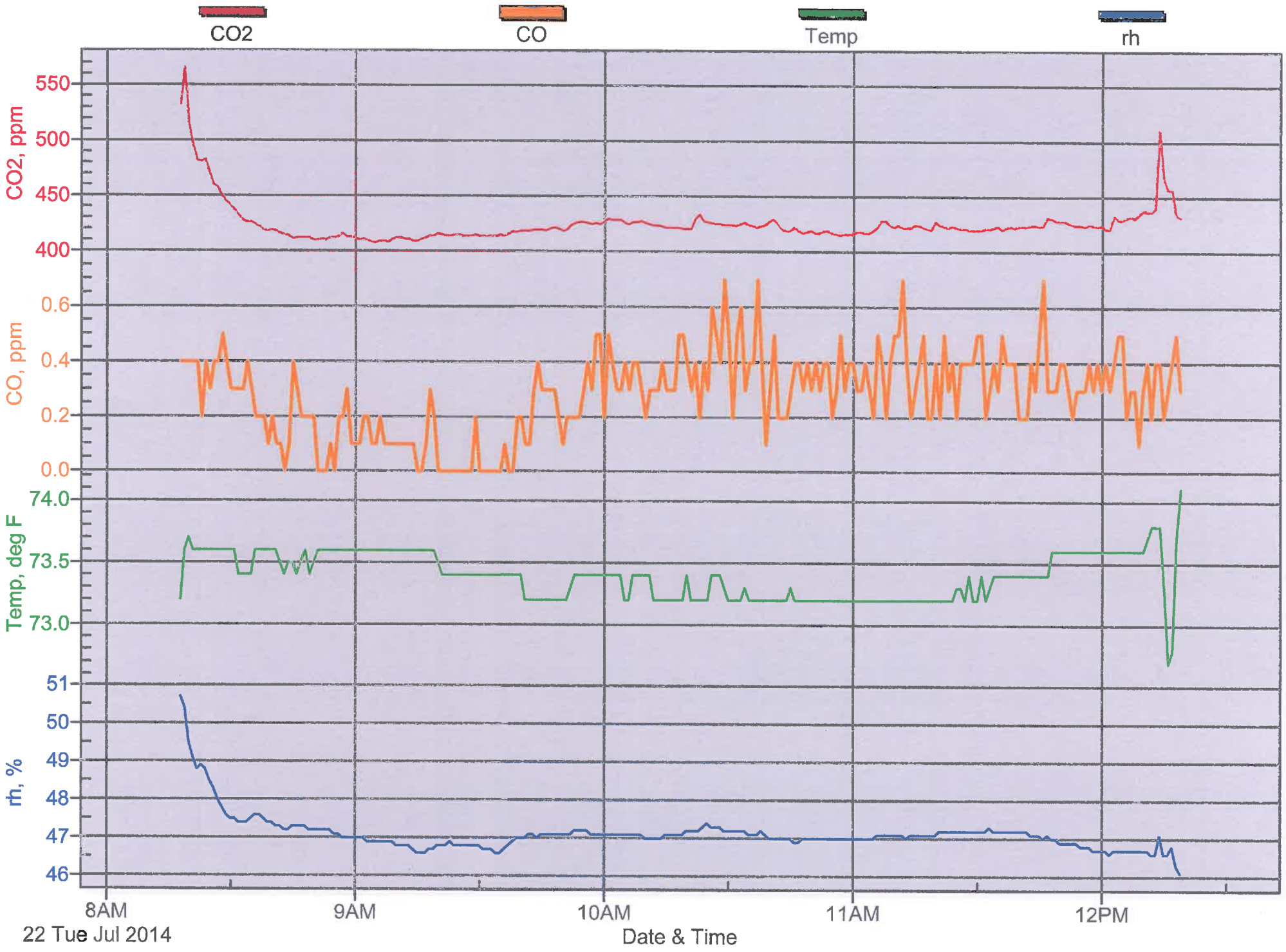
CO

Instrument		Data Properties	
Model	Q-Trak Plus	Start Date	07/22/2014
Meter S/N	8554-08061026	Start Time	08:16:49
-		Stop Date	07/22/2014
-		Stop Time	12:18:49
-		Total Time	0:04:02:00
-		Logging Interval	60 seconds

Statistics				
	CO2	CO	Temp	rh
Avg	425 ppm	0.3 ppm	73.4 deg F	47.1 %
Max	566 ppm	0.7 ppm	74.1 deg F	50.7 %
Max Date	07/22/2014	07/22/2014	07/22/2014	07/22/2014
Max Time	08:18:49	10:28:49	12:18:49	08:17:49
Min	408 ppm	0.0 ppm	72.7 deg F	46.1 %
Min Date	07/22/2014	07/22/2014	07/22/2014	07/22/2014
Min Time	09:03:49	08:42:49	12:15:49	12:18:49
TWA (8 hr)	214	0.1		
TWA Start Date	07/22/2014	07/22/2014		
TWA Start Time	08:16:49	08:16:49		
TWA End Time	12:18:49	12:18:49		

Floor 14 CO

07-22-14



APPENDIX C

PM10 – AIRBORNE DUST

The Park Place Building
Floor 14
July 22, 2014

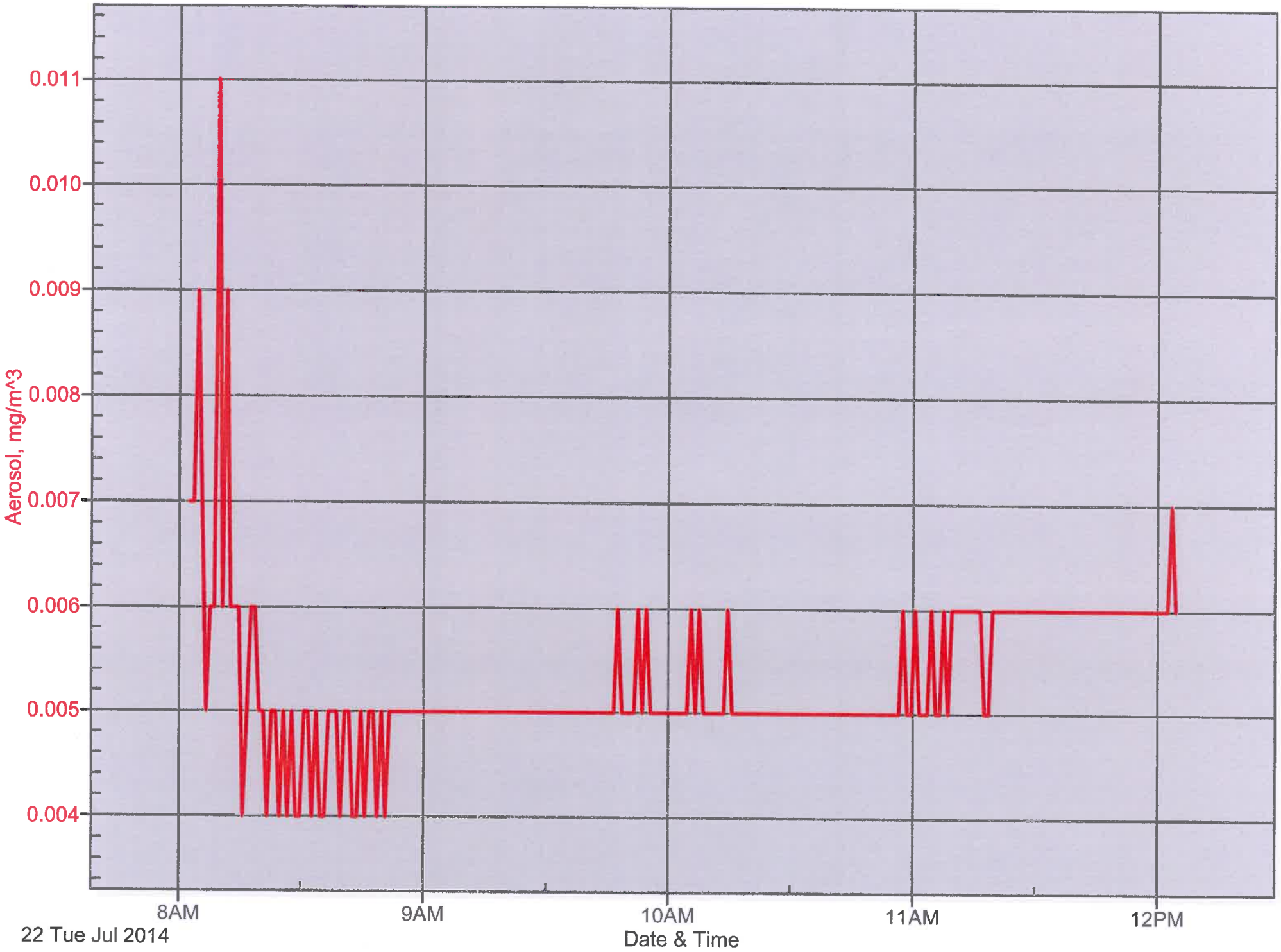
PM10

Instrument		Data Properties	
Model	Dust Trak	Start Date	07/22/2014
Meter S/N	85201507	Start Time	08:01:33
		Stop Date	07/22/2014
		Stop Time	12:04:33
		Total Time	0:04:03:00
		Logging Interval	60 seconds

Statistics	
	Aerosol
Avg	0.005 mg/m^3
Max	0.011 mg/m^3
Max Date	07/22/2014
Max Time	08:09:33
Min	0.004 mg/m^3
Min Date	07/22/2014
Min Time	08:15:33
TWA (8 hr)	0.003
TWA Start Date	07/22/2014
TWA Start Time	08:01:33
TWA End Time	12:04:33

Floor 14 - PM10

July 22, 2014



APPENDIX D

INSTRUMENT CALIBRATION DATA

EHS–International, Inc.

Q-TRAK Plus CALIBRATION LOG

TSI Model 8554
Serial Number 8554-08061026
Bought new by EHSI 8/2006

Date	Calibration By	CO2	CO	Temp	RH	
01/20/12	HOLZHAUER	X	X	—	—	
6/25/12	HOLZHAUER	X	X	—	—	
12/03/12	HOLZHAUER	X	X	—	—	
2/4/13	HOLZHAUER	X	X	—	—	
3/4/13	HOLZHAUER	X	X	—	—	
6/1/13	HOLZHAUER	X	X	—	—	
7/1/13	HOLZHAUER	X	X	—	—	
7/8/13	HOLZHAUER	X	X	—	—	
1/2/14	HOLZHAUER	X 102%	X 91%	—	—	
1/21/14	HOLZHAUER	X	X	—	—	
2/4/14	HOLZHAUER	X	X	—	—	
2/10/14	HOLZHAUER	X	X	—	—	
3/20/14	HOLZHAUER	X 101%	X 91%	—	—	bump test
4/1/14	HOLZHAUER	X	X	—	—	
4/29/14	HOLZHAUER	X 104%	X 97%	—	—	
7/18/14	HOLZHAUER	X	X			

CO/CO2 Span Gas Lot#06-3220, filled 12/21/06
CO/CO2 Zero Gas Lot#06-3150, filled 12/22/06

AM036

CERTIFICATE OF CALIBRATION AND TESTING

TSI Incorporated, 500 Cardigan Road, Shoreview, MN 55126 USA
Tel: 1-800-874-2811 1-651-490-2811 Fax: 1-651-490-3824 http://www.tsi.com

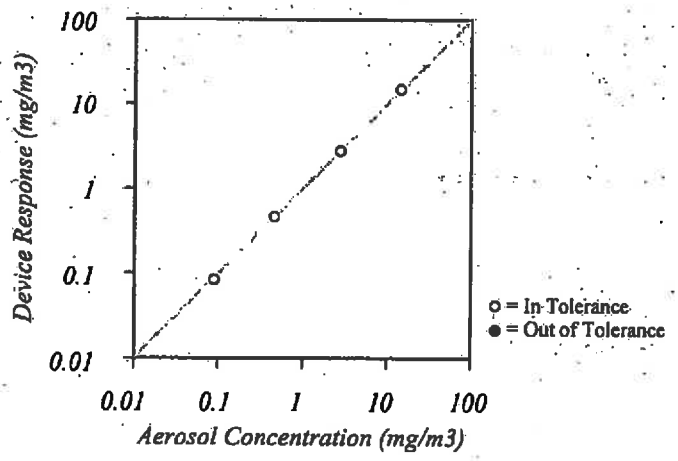
Environment Condition		
Temperature	74.8 (23.8)	°F (°C)
Relative Humidity	26	%RH
Barometric Pressure	28.91 (979.0)	inHg (hPa)

Model	8520
Serial Number	85201507

☒ As Left ☐ As Found

☒ In Tolerance ☐ Out of Tolerance

Concentration Linearity Plot



System ID: DTI101-02

Zero Stability Results			
Average:	Minimum:	Maximum:	Time:
0.000 :mg/m³	0.000 :mg/m³	0.001 :mg/m³	2.00 :hrs.

TSI Incorporated does hereby certify that all materials, components, and workmanship used in the manufacture of this equipment are in strict accordance with the applicable specifications agreed upon by TSI and the customer and with all published specifications. All performance and acceptance tests required under this contract were successfully conducted according to required specifications. There is no NIST standard for optical mass measurements. Calibration of this instrument performed by TSI has been done using emery oil and has been nominally adjusted to respirable mass of standard ISO 12103-1, A1 test dust (Arizona dust). Our calibration ratio is greater than 1.2:1

Measurement Variable	System ID	Last Cal.	Cal. Due	Measurement Variable	System ID	Last Cal.	Cal. Due
Barometric Pressure	E003733	03-12-13	03-12-14	Temperature	E002873	11-08-12	11-08-13
Humidity	E002873	11-08-12	11-08-13	DC Voltage	E003314	01-02-13	01-02-14
DC Voltage	E003315	01-02-13	01-02-14	Photometer	E003319	08-14-13	02-14-14
Microbalance	M001324	01-04-13	01-04-15	Pressure	E003511	11-07-12	11-07-13
Flowmeter	E002006	03-05-13	03-05-14				

Calibrated

☒ Final Function Check

October 18, 2013
Date

TSI P/N 2300157

APPENDIX E

GALSON LABORATORY ANALYTICAL RESULTS

TVOCS, FORMALDEHYDE & 4-PCH

Mr. Clinton Holzhauer
EHS-International, Inc.
13228 NE 20th Street
Suite 100
Bellevue, WA 98005

July 24, 2014

DOH ELAP #11626
AIHA-LAP #100324

Account# 13697

Login# L323876

Dear Mr. Holzhauer:

Enclosed are the analytical results for the samples received by our laboratory on July 23, 2014. All test results meet the quality control requirements of AIHA-LAP and NELAC unless otherwise stated in this report. All samples on the chain of custody were received in good condition unless otherwise noted.

Results in this report are based on the sampling data provided by the client and refer only to the samples as they were received at the laboratory. Unless otherwise requested, all samples will be discarded 14 days from the date of this report, with the exception of IOMs, which will be cleaned and disposed of after seven calendar days.

Current Scopes of Accreditation can be viewed at www.galsonlabs.com in the accreditations section under the "about Galson" tab.

Please contact Pamela Weaver at (888) 432-5227, if you would like any additional information regarding this report.

Thank you for using Galson Laboratories.

Sincerely,

Galson Laboratories

Mary G. Unangst
Laboratory Director

Enclosure(s)

GALSON LABORATORIES

LABORATORY ANALYSIS REPORT

6601 Kirkville Road
East Syracuse, NY 13057
(315) 432-5227
FAX: (315) 437-0571
www.galsonlabs.com

Client : EHS-International, Inc.
Site : Park Place Building
Project No. : 10605-01 14th Floor

Date Sampled : 22-JUL-14
Date Received : 23-JUL-14
Date Analyzed : 23-JUL-14
Report ID : 842120

Account No.: 13697
Login No. : L323876

Formaldehyde

Sample ID	Lab ID	Time minutes	Total ug	Conc ug/m3	ppb
10605-14-F	L323876-2	240	<0.6	<20	<20

COMMENTS: Please see attached lab footnote report for any applicable footnotes.

Level of quantitation: 0.6 ug
Analytical Method : mod. OSHA 1007; HPLC/UV
OSHA PEL : 0.75 ppm (TWA)
Collection Media : Assay 580

Submitted by: BCF
Approved by : tlh
Date : 24-JUL-14 NYS DOH # : 11626
QC by: Tony D'Amico

< -Less Than
> -Greater Than
NA -Not Applicable
mg -Milligrams
ug -Micrograms
ND -Not Detected
m3 -Cubic Meters
l -Liters
ppm -Parts per Million
kg -Kilograms
NS -Not Specified

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LABORATORY ANALYSIS REPORT

Client : EHS-International, Inc.
Site : Park Place Building
Project No. : 10605-01 14th Floor

Date Sampled : 22-JUL-14
Date Received : 23-JUL-14
Date Analyzed : 23-JUL-14
Report ID : 841946

Account No.: 13697
Login No. : L323876

Galson ID: L323876-1
Client ID: 10605-14-T

	LOQ ppbv	LOQ ug/m3	ppbv	ug/m3
Propylene	5.0	8.6	<5.0	<8.6
Freon-12	5.0	25	<5.0	<25
Chloromethane	5.0	10	<5.0	<10
Freon-114	5.0	35	<5.0	<35
Vinyl Chloride	5.0	13	<5.0	<13
1,3-Butadiene	5.0	11	<5.0	<11
Bromomethane	5.0	19	<5.0	<19
Chloroethane	5.0	13	<5.0	<13
Vinyl Bromide	5.0	22	<5.0	<22
Freon-11	5.0	28	<5.0	<28
Isopropyl Alcohol	25	61	<25	<61
Acetone	25	59	<25	<59
1,1-Dichloroethene	5.0	20	<5.0	<20
Methylene Chloride	5.0	17	<5.0	<17
Freon-113	5.0	38	<5.0	<38
Allyl Chloride	5.0	16	<5.0	<16
Carbon Disulfide	10	31	<10	<31
Trans-1,2-Dichloroethene	5.0	20	<5.0	<20
Methyl Tert-Butyl Ether	5.0	18	<5.0	<18
1,1-Dichloroethane	5.0	20	<5.0	<20
Vinyl Acetate	5.0	18	<5.0	<18

Analytical Method : mod. OSHA PV2120/mod. EPA
Collection Media : Mini Can

Submitted by: kaw
Approved by : nkp
Date : 24-JUL-14 NYS DOH # : 11626
QC by : Tony D'Amico

< -Less Than
> -Greater Than
NA -Not Applicable
NS -Not Specified

MG -Milligrams
UG -Micrograms
ND -Not Detected
KG -Kilograms

M3 -Cubic Meters
L -Liters
ppbv-Parts per Billion Volume
LOQ -Limit of Quantitation

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Date Sampled : 22-JUL-14
Date Received : 23-JUL-14
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Report ID : 841946

Account No.: 13697
Login No. : L323876

Galson ID: L323876-1
Client ID: 10605-14-T

	LOQ ppbv	LOQ ug/m3	ppbv	ug/m3
Methyl Ethyl Ketone	5.0	15	<5.0	<15
cis-1,2-Dichloroethylene	5.0	20	<5.0	<20
Hexane	5.0	18	<5.0	<18
Ethyl Acetate	5.0	18	<5.0	<18
Chloroform	5.0	24	<5.0	<24
Tetrahydrofuran	5.0	15	<5.0	<15
1,2-Dichloroethane	5.0	20	<5.0	<20
1,1,1-Trichloroethane	5.0	27	<5.0	<27
Cyclohexane	5.0	17	<5.0	<17
Carbon Tetrachloride	5.0	31	<5.0	<31
Benzene	5.0	16	<5.0	<16
1,4-Dioxane	20	72	<20	<72
2,2,4-Trimethylpentane	5.0	23	<5.0	<23
Heptane	5.0	20	<5.0	<20
1,2-Dichloropropane	5.0	23	<5.0	<23
Trichloroethylene	5.0	27	<5.0	<27
Bromodichloromethane	5.0	34	<5.0	<34
cis-1,3-Dichloropropene	5.0	23	<5.0	<23
trans-1,3-Dichloropropene	5.0	23	<5.0	<23
1,1,2-Trichloroethane	5.0	27	<5.0	<27
Toluene	5.0	19	<5.0	<19

Analytical Method : mod. OSHA PV2120/mod. EPA
Collection Media : Mini Can

Submitted by: kaw
Approved by : nkp
Date : 24-JUL-14 NYS DOH # : 11626
QC by : Tony D'Amico

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LABORATORY ANALYSIS REPORT

Client : EHS-International, Inc.
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Project No. : 10605-01 14th Floor

Date Sampled : 22-JUL-14
Date Received : 23-JUL-14
Date Analyzed : 23-JUL-14
Report ID : 841946

Account No.: 13697
Login No. : L323876

Galson ID: L323876-1
Client ID: 10605-14-T

	LOQ ppbv	LOQ ug/m3	ppbv	ug/m3
Dibromochloromethane	5.0	43	<5.0	<43
Methyl Isobutyl Ketone	20	82	<20	<82
Methyl Butyl Ketone	20	82	<20	<82
1,2-Dibromoethane	5.0	38	<5.0	<38
Tetrachloroethylene	5.0	34	<5.0	<34
Chlorobenzene	5.0	23	<5.0	<23
Ethylbenzene	5.0	22	<5.0	<22
Bromoform	5.0	52	<5.0	<52
m & p-xylene	10	43	<10	<43
Styrene	5.0	21	<5.0	<21
o-Xylene	5.0	22	<5.0	<22
1,1,2,2-Tetrachloroethane	5.0	34	<5.0	<34
4-Ethyltoluene	5.0	25	<5.0	<25
1,3,5-Trimethylbenzene	5.0	25	<5.0	<25
1,2,4-Trimethylbenzene	5.0	25	<5.0	<25
1,3-Dichlorobenzene	5.0	30	<5.0	<30
Benzyl Chloride	5.0	29	<5.0	<29
1,4-Dichlorobenzene	5.0	30	<5.0	<30
1,2-Dichlorobenzene	5.0	30	<5.0	<30
Total Volatile Organics				ND

Analytical Method : mod. OSHA PV2120/mod. EPA
Collection Media : Mini Can

Submitted by: kaw
Approved by : nkp
Date : 24-JUL-14 NYS DOH # : 11626
QC by : Tony D'Amico

< -Less Than
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L -Liters
ppbv-Parts per Billion Volume
LOQ -Limit of Quantitation

LABORATORY ANALYSIS REPORT

6601 Kirkville Road
East Syracuse, NY 13057
(315) 432-5227
FAX: (315) 437-0571
www.galsonlabs.com

Client : EHS-International, Inc.
Site : Park Place Building
Project No. : 10605-01 14th Floor

Date Sampled : 22-JUL-14
Date Received : 23-JUL-14
Date Analyzed : 23-JUL-14
Report ID : 841947

Account No.: 13697
Login No. : L323876

Client ID : 10605-14-T **Lab ID : L323876-1**

Tentatively Identified Compounds	CAS Number	Retention Time	Estimated Concentration ppbv	Estimated Concentration ug/m3
No Volatiles Found			0.0	0.0
Total VOC's				ND

Analytical Method : mod. OSHA PV2120/mod. EPA
Collection Media : Mini Can

Submitted by: kaw
Approved by : nkp
Date : 24-JUL-14 NYS DOH # : 11626
QC by: Tony D'Amico

< -Less Than mg -Milligrams m3 -Cubic Meters kg -Kilograms
> -Greater Than ug -Micrograms l -Liters LOQ -Limit of Quantitation
NA -Not Applicable ND -Not Detected NS -Not Specified ppbv-Parts per Billion Volume

Field sampling was not performed by Galson. Galson presents results based on sampling data provided by clients.

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LABORATORY ANALYSIS REPORT

Client : EHS-International, Inc.
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Project No. : 10605-01 14th Floor

Date Sampled : 22-JUL-14
Date Received : 23-JUL-14
Date Analyzed : 23-JUL-14
Report ID : 841947

Account No.: 13697
Login No. : L323876

LEED TESTING RESULTS

Sample ID	Lab ID	TVOCs ug/m3
10605-14-T	L323876-1	<200

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Client : EHS-International, Inc.
Site : Park Place Building
Project No. : 10605-01 14th Floor

Date Sampled : 22-JUL-14
Date Received : 23-JUL-14
Date Analyzed : 24-JUL-14
Report ID : 842021

Account No.: 13697
Login No. : L323876

4-Phenylcyclohexene

Sample ID	Lab ID	Air Vol liter	Front ug	Back ug	Total ug	Conc ug/m3	ppb
10605-14-PC	L323876-3	48	<0.2	<0.2	<0.2	<4	<0.7

COMMENTS: Please see attached lab footnote report for any applicable footnotes.

Level of quantitation: 0.2 ug
Analytical Method : mod. NIOSH 1501; GC/PID
OSHA PEL : NA
Collection Media : 226-01

Submitted by: BDK
Approved by : tlh
Date : 24-JUL-14 NYS DOH # : 11626
QC by: Tony D'Amico

< -Less Than
> -Greater Than
NA -Not Applicable
mg -Milligrams
ug -Micrograms
ND -Not Detected
m3 -Cubic Meters
l -Liters
ppm -Parts per Million
kg -Kilograms
NS -Not Specified

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LABORATORY FOOTNOTE REPORT

Client Name : EHS-International, Inc.
Site : Park Place Building
Project No. : 10605-01 14th Floor

Date Sampled : 22-JUL-14 Account No.: 13697
Date Received: 23-JUL-14 Login No. : L323876
Date Analyzed: 23-JUL-14 - 24-JUL-14

Unless otherwise noted below, all quality control results associated with the samples were within established control limits or did not impact reported results.

Unrounded results are carried through the calculations that yield the final result and the final result is rounded to the number of significant figures appropriate to the accuracy of the analytical method. Please note that results appearing in the columns preceeding the final result column may have been rounded in order to fit the report format and therefore, if carried through the calculations, may not yield an identical final result to the one reported.

The stated LOQs for each analyte represent the demonstrated LOQ concentrations prior to correction for desorption efficiency (if applicable).

Unless otherwise noted below, reported results have not been blank corrected for any field blank or method blank.

L323876 (Report ID: 842120):
SOPs: LC-SOP-4(14)
Total ug corrected for a desorption efficiency of 94%.
Formaldehyde results have been corrected for the average background found on the media: 0.1634 ug for lot #5C14.

Accuracy and mean recovery data presented below is based on a 95% confidence interval (k=2). The estimated uncertainty applies to the media, technology, and SOP referenced in this report and does not account for the uncertainty associated with the sampling process.

Parameter	Accuracy	Mean Recovery
Formaldehyde	+/-7.3%	97.4%

L323876 (Report ID: 841946):
SOPs: in-vocs(26)

L323876-1 (Report ID: 841946):
Sample canister was received at (or near) ambient pressure, indicating that the sampling event may have ended prematurely. Reported results may not be representative of the intended sampling duration.

L323876 (Report ID: 841946):
Accuracy and mean recovery data presented below is based on a 95% confidence interval (k=2). The estimated uncertainty applies to the media, technology, and SOP referenced in this report and does not account for the uncertainty associated with the sampling process.

Parameter	Accuracy	Mean Recovery
1,1,2,2-Tetrachloroethane	+/-18.9%	80.4%
1,1,2-Trichloroethane	+/-16.6%	90.3%
1,1-Dichloroethane	+/-16.8%	93.8%
1,1-Dichloroethene	+/-17.8%	94.6%
1,2,4-Trimethylbenzene	+/-22.4%	89.4%
1,2-Dibromoethane	+/-18.3%	89.1%
1,2-Dichlorobenzene	+/-22.2%	83.6%
1,2-Dichloroethane	+/-19.9%	94.2%
1,2-Dichloropropane	+/-18.3%	90.9%
1,3,5-Trimethylbenzene	+/-20.8%	88.9%
1,3-Dichlorobenzene	+/-20.2%	86.4%
1,4-Dichlorobenzene	+/-20.8%	86.7%

< -Less Than mg -Milligrams m3 -Cubic Meters kg -Kilograms
> -Greater Than ug -Micrograms l -Liters NS -Not Specified
NA -Not Applicable ND -Not Detected ppm -Parts per Million

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Client Name : EHS-International, Inc.
Site : Park Place Building
Project No. : 10605-01 14th Floor

Date Sampled : 22-JUL-14 Account No.: 13697
Date Received: 23-JUL-14 Login No. : L323876
Date Analyzed: 23-JUL-14 - 24-JUL-14

2,2,4-Trimethylpentane	+/-17.4%	95%
4-Ethyltoluene	+/-20.2%	91.5%
Allyl Chloride	+/-18.7%	93.5%
Acetone	+/-22.2%	91.6%
Bromodichloromethane	+/-18.7%	95.8%
Bromoform	+/-18.6%	92.6%
1,3-Butadiene	+/-21%	95.5%
Benzene	+/-18.1%	93.3%
Benzyl Chloride	+/-26.6%	91.1%
Carbon Disulfide	+/-19.2%	100%
Carbon Tetrachloride	+/-20.2%	94.9%
cis-1,2-Dichloroethylene	+/-19.3%	84.9%
cis-1,3-Dichloropropene	+/-22.2%	101%
Chlorobenzene	+/-17.7%	88.2%
Dibromochloromethane	+/-17.8%	91.9%
Chloroform	+/-17.1%	93.1%
Cyclohexane	+/-18.9%	93.6%
1,4-Dioxane	+/-28.2%	87.5%
Ethyl Acetate	+/-20.8%	93%
Ethylbenzene	+/-18.4%	87.1%
Chloroethane	+/-21.6%	97.5%
Freon-11	+/-22.8%	95.4%
Freon-113	+/-17.1%	95%
Freon-114	+/-26%	83.2%
Freon-12	+/-26.4%	99.5%
Heptane	+/-18.6%	94.1%
Isopropyl Alcohol	+/-23.4%	92.2%
1,1,1-Trichloroethane	+/-18.4%	91.1%
Bromomethane	+/-18.9%	89.1%
Chloromethane	+/-21.8%	102%
Methylene Chloride	+/-15.4%	90%
Methyl Ethyl Ketone	+/-21.4%	95.7%
Methyl Isobutyl Ketone	+/-21.6%	92.6%
Methyl Butyl Ketone	+/-22.8%	93.7%
m & p-xylene	+/-18%	87.8%
Methyl Tert-Butyl Ether	+/-19.6%	94.1%
Hexane	+/-17.8%	93.7%
o-Xylene	+/-17.6%	87.1%
Propylene	+/-26%	104%
Styrene	+/-21.4%	91.7%
Trichloroethylene	+/-18.3%	94.4%
Tetrachloroethylene	+/-18.7%	90%
Tetrahydrofuran	+/-22.2%	94.4%
Toluene	+/-19.9%	90.1%
Trans-1,2-Dichloroethene	+/-19.2%	106%
trans-1,3-Dichloropropene	+/-21%	96.8%
Vinyl Acetate	+/-23.4%	89.6%
Vinyl Bromide	+/-18.9%	97.1%
Vinyl Chloride	+/-19.3%	96%

L323876 (Report ID: 841947):
Tentatively Identified Compounds (TICS) are estimated values. TICS are calculated using an average response factor of 1 for all compounds.
SOPs: in-vocs(26)

L323876 (Report ID: 842021):
Total ug corrected for a desorption efficiency of 97%.

< -Less Than mg -Milligrams m3 -Cubic Meters kg -Kilograms
> -Greater Than ug -Micrograms l -Liters NS -Not Specified
NA -Not Applicable ND -Not Detected ppm -Parts per Million

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LABORATORY FOOTNOTE REPORT

Client Name : EHS-International, Inc.
Site : Park Place Building
Project No. : 10605-01 14th Floor

Date Sampled : 22-JUL-14 Account No.: 13697
Date Received: 23-JUL-14 Login No. : L323876
Date Analyzed: 23-JUL-14 - 24-JUL-14

L323876 (Report ID: 842021):
SOPs: GC-SOP-12(7), GC-SOP-16(12), GC-SOP-8(13)

Accuracy and mean recovery data presented below is based on a 95% confidence interval (k=2). The estimated uncertainty applies to the media, technology, and SOP referenced in this report and does not account for the uncertainty associated with the sampling process.

Parameter	Accuracy	Mean Recovery
4-Phenylcyclohexene	+/-18.7%	95.3%

< -Less Than mg -Milligrams m3 -Cubic Meters kg -Kilograms
> -Greater Than ug -Micrograms l -Liters NS -Not Specified
NA -Not Applicable ND -Not Detected ppm -Parts per Million

R20

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Tel: 315-432-5227
888-432-5227
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310998

☐ New Client?

Client Account No.* : _____

Report To* : Clinton Holzhauer
EHS-International, Inc.
13228 NE 20th St. Suite 100
Bellevue WA 98005
Phone No.* : (425) 455-2959
Cell No. : (425) 766-5697
Email Results To : Clinton H.
Email Address : clintonh@ehsintl.com

Invoice To* : Shelby McClure
EHS-International, Inc.
13228 NE 20th St. Suite 100
Bellevue, WA 98005
Phone No. : (425) 455-2959
Email : shelbym@ehsintl.com
Purchase Order No. : 10605-14
Credit Card : ☐ Credit Card on File ☐ Call for Credit Card Info

Need Results By*:	(surcharge)
☐ Standard	0%
☐ 4 Business Days	35%
☐ 3 Business Days	50%
☐ 2 Business Days	75%
☒ Next Day by 6pm	100%
☐ Next Day by Noon	150%
☐ Same Day	200%

☒ Samples submitted using the FreePumpLoan™ Program.

☒ Samples submitted using the FreeSamplingBadges™ Program.

Site Name : Park Place Building Project : 10605-01 14th Floor Sampled By : R. Peterson

Comments: 14th Floor
Both Covers Removed on Formaldehyde Badge
All 3 samples are in Blue GALSON Bag

List description of industry or process/interferences present in sampling area:

State samples were collected in (ex. NY): WA

Please indicate which OEL this data will be used for:
☐ OSHA PEL ☐ ACGIH TLV ☐ Cal OSHA
☐ MSHA ☒ Other (specify): LEED

Sample Identification* (Maximum of 20 characters, ID's longer than 20 characters will be abbreviated.)	Date Sampled* (mm/dd/yy)	Collection Medium	Sample Volume, Sample Time, or Sample Area*	Sample Units*: L, ml, min., in2, cm2, ft2	Analysis Requested*	Method Reference^	Hexavalent Chromium Process (ex. welding, plating, painting, etc.)*
Example	01/01/11	2pc UW PVC	960	L	Hexavalent Chromium (Cr6)	mod. OSHA ID-215	Welding
10605-14-T	07/22/14	1L Summa canister	240	min	TVOC for LEED		WA597
10605-14-F	07/22/14	Assay 580 Badge	240	min	Formaldehyde for LEED		435
10605-14-PC	07/22/14	SKC 226-01	48.0	L	4-PCH for LEED		714

^Galson Laboratories will substitute our routine/preferred method if it does not match the method listed on the COC unless this box is checked: ☐ Use method(s) listed on COC

For metals analysis: if requesting an analyte with the option of a lower LOQ please indicate if the lower LOQ is required (only available for certain analytes see SAG):

For crystalline silica: form(s) of silica needed must be indicated (Quartz, Cristobalite, and/or Tridymite)*:

Chain of Custody	Print Name/Signature	Date/Time		Print Name/Signature	Date/Time
Relinquished by :	Rory Peterson	07/22/14 – 1:00pm	Received by:		
Relinquished by :			Received by:	Teresa Conrad	7/23/14 09:26

Samples received after 3pm will be considered as next day's business.
*Required fields, failure to complete these fields may result in a delay in your samples being processed.

LAB ORIGINAL

APPENDIX F

EHSI LEED SAMPLING FORM

FIELD DATA SHEET

ehsi
EHS-International, Inc.

LEED SAMPLING FORM

Project Location: Park Place Building
EHSI Project No: 10605 -01
Technician Rory Peterson
Date 7/22/14

Location #: 14th Floor, NW Interior Conference Room (See Floor Plan)
Comments

CO :
Start 8:03 Finish 12:05 Q-Trak # EHSI 0231
Log # 1
Comments:

PM10 :
Start 8:02 Finish 12:04 Dust Trak # TSI AM036 Model 5220
Log # 1
Comments:

TVOC:
Sample ID: 10605 - 14 - T
Start 8:00 Finish 12:00 Canister# WA2435 Regulator # WR 710
Initial Pressure (in Hg): -30+ Final Pressure (in Hg):
Comments:

4-PCH:
Sample ID: 10605 - 14 - PC Tube # SKC 226-01
Start 8:02 Finish 12:02 Pump# EHSI 0708
Initial Flow (LPM): ~~-30+~~ 0.20 RP 7/22/14 Final Flow: 0.20 Ave. Flow: 0.20
Comments:

Formaldehyde: (Passive Badge)
Sample ID: 10605 - 14 - F Lot # 580ATSC14
Start 8:00 Finish 12:00 Badge # SC14 - KN6355
Comments: Both Plates Removed

APPENDIX G

LETTER FROM MACDONALD-MILLER FACILITY SOLUTION REGARDING CONDITION OF HVAC DURING TESTING

MacDonald-Miller
FACILITY SOLUTIONS®

July 22, 2014

Brian Morant
Hermanson Company LLC
1221 2nd Ave N
Kent, WA 98032

Subject: IAQ Building Ventilation

Dear Brian:

This letter is to confirm that the Park Place building ventilation system has been flushing for the past 10 days. It is scheduled to be returned to normal building occupied mode for IAQ testing on Level 14 the morning of July 22nd at 7:00 AM.

The system will continue to provide minimum OSA per normal occupied schedule until 6:00 PM.

Regards,

Brian Wheeler

Brian Wheeler
System Specialist
MacDonald-Miller Facility Solutions
206-768-4064